THROUGH A DIFFERENT LENS: EXAMINING THE EFFECT OF PERSON CONSTRUAL ON CHILDREN'S IMPLICIT ATTITUDES

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ABSTRACT

Research suggests that non-Black children show an implicit pro-White (versus Black) bias from early childhood (Baron & Banaji, 2006; Dunham, Baron, & Banaji, 2008). Across four studies I examined whether encouraging children to construe targets along a dimension other than race could eliminate this bias. Children aged 5- to 10-years completed an Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) containing smiling Black and neutral White targets (Studies 1, 2, and 4) or same-sex Black and other-sex White targets (Study 3). Consistent with previous findings, when children construed targets by race, they demonstrated an implicit pro-White bias. However, when children construed these same targets by emotional expression (or, in Study 3, by gender), their biases differed reliably; children showed greater implicit positivity towards smiling Black (or same-sex Black) targets relative to neutral White (or other-sex White) targets. In Study 4 children's implicit biases were similarly attenuated following a brief intervention in which an adult made functional use of emotional expression, and this was mediated by children's decreased use of race as a basis for social categorization. Taken together, these studies provide insight into the impact of person construal on children's implicit biases and suggest that even in childhood implicit attitudes are online constructions that integrate preexisting associations and contextual cues.

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Examining the Effect of Person Construal on Children's Implicit Attitudes

A main focus in the study of prejudice among adults in recent years has been on automatic or implicit racial attitudes (Payne & Gawronski, 2010), defined as "unintentional, resource-independent, unconscious, or uncontrollable" (Gawronski & De Houwer, in press, p.1) evaluations that are automatically activated by an attitude object. Across several studies, researchers have demonstrated that the presentation of Black, as opposed to White faces can automatically elicit affect among non-Black adults, with the majority of adults showing an implicit pro-White bias (Fazio, Jackson, Dunton, & Williams, 1995; Kawakami, Phills, Steele, & Dovidio, 2007; Olson & Fazio, 2003; Payne, Cheng, Govorun, & Stewart, 2005). Some of the most consistent and striking demonstrations of this pro-White bias have come from research that has made use of the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998; Greenwald, Nosek, & Banaji, 2003).

The Implicit Association Test (or IAT) is a reaction-time measure designed to assess people's associations between target (e.g., Black or White) and attribute (e.g., pleasant and unpleasant) concepts. In one of two critical blocks of the traditional Black-White IAT, participants are required to pair White targets with pleasant stimuli and Black targets with unpleasant stimuli; in the other critical block the attribute concepts are reversed (White targets + unpleasant stimuli, Black targets + pleasant stimuli). The assumption underlying this task is that people who hold implicit pro-White (relative to Black) biases should be faster at pairing White targets with pleasant stimuli and Black targets with unpleasant stimuli relative to the reverse pairing. To date the IAT has been one of the most widely used measures of implicit racial

attitudes (Nosek, Hawkins, & Frazier, 2011), and some researchers estimate that at least seventy percent of White Americans show a pro-White bias on this measure (Olson & Fazio, 2003).

Although this measure has been used extensively to provide estimates of adults' implicit racial attitudes, a handful of studies have now examined the implicit racial biases of children using child-friendly versions of the IAT (ch-IAT; Baron & Banaji, 2006). The results from these initial studies, replicated cross-culturally with non-Black children, have been surprisingly consistent, providing robust evidence that pro-White (relative to Black) bias is present from as early as 6 years of age, often at magnitudes equivalent to 9-year-olds and adults (Baron & Banaji, 2006; Dunham, Baron, & Banaji, 2006, 2008; Newheiser & Olson, 2012; Rutland, Cameron, Milne, & McGeorge, 2005; Sinclair, Dunn, & Lowery, 2005; Steele, Williams, & Tay, 2013; Williams & Steele, 2013). For example, Rutland et al. (2005) found that White British children (aged 6- to 16-years) demonstrated pro-White (relative to Black) biases that did not differ by age and were not affected by the salience of anti-prejudice social norms. Similarly, Baron and Banaji (2006) found that the pro-White biases of 6-year-olds were equal in magnitude to that of 10-year-olds and adults (see also Newheiser & Olson, 2012; Williams & Steele, 2013). In addition, Steele et al. (2013) found an implicit pro-White (relative to Black) bias among non-Black minority children in North America as well as Malay and Chinese children living in the Southeast Asian country of Brunei. These findings have led some researchers to suggest that implicit pro-White bias emerges early and remains relatively stable throughout development (Baron & Banaji, 2006; Dunham et al., 2008).

One important question to emerge from these initial findings is whether children's implicit racial attitudes are similarly stable across contexts, or whether there are conditions under which these biases will be eliminated. In the present research I addressed this question by examining children's implicit attitudes towards Black and White targets who also differed systematically by emotional expression (Studies 1, 2, & 4) or gender (Study 3). Across each of the four studies I tested whether implicit racial biases could be reduced by encouraging children to construe these White and Black targets by a dimension other than race. In addition, I examined the extent to which children spontaneously construed multiply categorizable novel targets by race, as opposed to emotional expression (Studies 2 & 4) or gender (Study 3). Finally, in Study 4, I tested whether an intervention designed to decrease the psychological salience of race (Bigler & Liben, 2007) would lead to reduced pro-White biases among children, and whether this would be mediated by children's decreased use of race as a basis for social categorization.

Variability of implicit attitudes

Although there is currently limited research examining variability of children's implicit attitudes, a number of studies have demonstrated that adults' implicit attitudes can be altered by shifting the way in which targets are perceived (for a review, see Blair, 2002; Gawronski & Bodenhausen, 2006). For example, Wittenbrink, Judd and Park (2001) created a sequential priming procedure in which participants were required to classify a target word as positive or negative after the presentation of a Black or White target in a positive context (such as a church) or a negative context (such as a dilapidated street corner). They found significantly higher levels of implicit negativity (as measured by the time taken to respond to negative

words) towards Black targets presented on a street corner relative to Black targets presented in a church. Similarly, Dasgupta and Greenwald (2001) found lower levels of implicit racial bias among participants who were first exposed to admired Black exemplars (such as Martin Luther King) and disliked White exemplars (such as Charles Manson) than among participants who first saw disliked Black exemplars (such as O.J. Simpson) and admired White exemplars (such as John F. Kennedy). These findings are consistent with the associative-propositional evaluation (APE) model which suggests that implicit attitudes are online constructions that are created based on both preexisting associations in memory and contextual cues (Gawronski & Bodenhausen, 2006). According to this model, exposure to positive Black exemplars activates a different pattern of evaluative associations with Black people in general as compared to exposure to negative Black exemplars.

Other research suggests that adults' implicit racial biases are significantly muted when the target outgroup (i.e., Blacks) is less prototypical of their racial group (Livingston & Brewer, 2002); when the perceiver is in the presence of a Black experimenter (Lowery, Hardin, & Sinclair, 2001) or when the perceiver is first trained to approach Blacks (Phills, Kawakami, Tabi, Nadolny, & Inzlicht, 2011). Of particular relevance to the current research are studies by Mitchell, Nosek, and Banaji (2003), which further suggest that biases can be altered when identical targets are construed along a dimension other than race. In their studies, participants completed IATs where liked Black athletes and disliked White politicians were used as the attitude targets. When participants were required to categorize targets in terms of race, they demonstrated an implicit preference for the White politicians relative to the Black athletes; by contrast, when participants categorized targets in terms of their

occupation, they demonstrated an implicit preference for the Black athletes relative to the White politicians. These results suggest that among adults, the associations that are activated upon encountering multiply categorizable targets may differ considerably depending on how the targets are construed.

Emotional expression and racial attitudes

In the present research I extended these previous findings by examining the impact of person construal on children's implicit attitudes, with a specific focus on attitudes towards novel targets who differed systematically by race and emotional expression. Emotional expression is a temporary state that can signal an individual's willingness to engage in friendly interactions (Abe, Beetham, & Izard, 2002) and research by Schultz, Ambike, Buckingham-Howes, and Cheah (2008) suggests that even children as young as three- to five-years recognize the value in attending to emotional expression when selecting playmates; in their study children were more likely to select smiling children over children with neutral expressions as potential playmates.

Despite the potential importance of emotional expression in conveying or dispelling threat, very little research has examined the impact of emotional expression on people's attitudes towards novel members of racial outgroups. Currently, the majority of studies that have examined the relationship between emotional expression and race have investigated their combined effect on social categorization. For example, high-prejudice White adults are more likely than low-prejudice adults to categorize emotionally ambiguous Black (but not White) faces as angry (Hugenberg & Bodenhausen, 2003) and to categorize racially ambiguous angry (but not happy) faces as Black (Hugenberg & Bodenhausen, 2004). Similarly, Taiwanese and White

American children are more likely to categorize angry faces as racial outgroup members than ingroup members (Dunham, Chen, & Banaji, 2013). These findings are thought to be due to greater associations between outgroups and negativity, and demonstrate the interaction between emotional expression and race in the categorization process. To my knowledge, no research has directly investigated the impact of emotional expression on implicit attitudes, with a specific focus on whether implicit pro-White biases will persist when smiling Black and neutral White faces are construed by their emotional expression instead of their race.

The impact of person construal on children's implicit racial attitudes

A good deal of research suggests that the way in which adults construe multiply categorizable targets can impact the stereotypes that are spontaneously activated (Fiske, Lin, & Neuberg, 1999; Gilbert & Hixon, 1991; Macrae & Bodenhausen, 2001; Macrae, Bodenhausen, & Milne, 1995; Sinclair & Kunda, 1999; Spencer, Fein, Wolfe, Fong, & Dunn 1998) as well as adults' implicit racial attitudes (Barden, Maddux, Petty, & Brewer, 2004; Mitchell et al., 2003; Rudman & Kilianski, 2000, see Gawronski & Bodenhausen, 2006 for a review). However, there are some reasons to expect that children's racial attitudes may be less flexible. According to the Social Cognitive Developmental Theory (SCDT) of prejudice (Aboud, 2008), young children's impressions of others are often influenced by the groups to which they belong. Specifically, both theory and research suggest that young children (age 4- to 7-years) tend to categorize others into ingroups and outgroups based on perceptually-salient social groups such as race or gender, and because they are sociocentric, they tend to hold positive attitudes about their ingroups. As such, young children might be particularly likely to spontaneously categorize novel targets by race

and not by other, less stable characteristics, such as emotional expression. In addition, in early childhood, children have also not yet acquired multiple classification skills, defined as the ability to simultaneously categorize things in more than one way (Aboud, 2003; Bigler & Liben, 1992), suggesting that young children might not have the cognitive capability to attend to multiple dimensions of others during person perception. According to theory and research examining children's social cognitive development, it is only after 8-years of age that children's cognitive orientation towards others shifts, as they acquire the ability to focus more on individuals' unique qualities, to minimize group category information as a basis for evaluation, and to simultaneously attend to the multiple dimensions of others. If young children are particularly likely to categorize others by their racial group, and are unable to categorize others in more than one way, then it is possible that their implicit racial attitudes may be more rigid than the attitudes of older children and adults.

By contrast, there is also reason to believe that younger and older children's racial attitudes may be equally, or possibly more contextually dependent relative to adults'. Although some theorizing suggests that children are likely to perceive others according to perceptually salient social groups, some researchers have questioned the extent to which negative affect is spontaneously activated in response to racial outgroup members. For example, Williams and Steele (2013) examined the implicit racial attitudes of 5- to 12-year old children using the Affect Misattribution Procedure (AMP; Payne et al., 2005) – an exemplar-based measure of implicit attitudes that, unlike the IAT, does not require participants to categorize targets by race. When race was not a salient category to participants, they found no evidence that children had

automatized negativity towards novel Black targets. Instead, positivity appeared to be elicited primarily by White targets, only in early childhood, suggesting that implicit racial prejudice in childhood may only emerge when the task requires that targets be categorized by race.

Similarly, other research suggests that older children may be less likely to spontaneously categorize others by race as compared to adolescents (aged 12- to 14-years). Across four studies, Degner and Wentura (2010) had German (Studies 1-3) or Dutch (Study 4) children aged 9- to 14-years complete an exemplar-based affective priming task (Fazio et al., 1995; Fazio, Sanbonmatsu, Powell, & Kardes, 1986) where implicit racial attitudes were measured. They found that participants aged 9- to 11-years showed a greater degree of implicit negativity towards racial outgroups (Turkish or Moroccan) relative to ingroup targets only when the task required participants to categorize targets according to race. By contrast, participants aged 12- to 14-years demonstrated racial bias regardless of whether racial group membership was explicitly measured in the task. Taken together these findings suggest that negative affect may not be spontaneously elicited in response to racial outgroup targets when they are not categorized by race, suggesting that children's implicit biases might only emerge when race is salient and task-relevant.

Overview of the Research

The primary goal of the present research was to examine the impact of person construal on children's implicit attitudes. To accomplish this goal, children completed a child-friendly Implicit Association Test (ch-IAT; Baron & Banaji, 2006) designed to measure their implicit attitudes towards targets who differed systematically along two dimensions (race and either emotional expression or

gender); in each study, children were presented with smiling Black targets and neutral White targets (Studies 1, 2, & 4) or same-sex Black targets and other-sex White targets (Study 3). Building on theory and research with adults, I hypothesized that children would show variability in their implicit attitudes in response to construal manipulations within (Studies 1-3) and prior to (Study 4) the ch-IAT. Specifically, I predicted that children would show an implicit pro-White bias when they construed targets according to their race (Baron & Banaji, 2006; Dunham et al., 2008; Newheiser & Olson, 2012; Rutland et al., 2005; Williams & Steele, 2013). By contrast, in line with the possibility that children's implicit attitudes reflect online constructions that incorporate pre-existing evaluations and contextual cues, I predicted that when children construed targets according to the other dimension (emotional expression or gender), their implicit attitudes towards these targets would differ reliably, and children would show greater implicit positivity towards smiling Black (or same-sex Black) targets.

In addition to examining the effect of person construal on children's implicit racial attitudes, in the present research I extended previous findings by examining the extent to which children spontaneously construe others in terms of their race as opposed to their emotional expression (Studies 2 & 4) or gender (Study 3) when forming implicit attitudes towards multiply categorizable targets. Finally, in Study 4, I tested whether an intervention designed to decrease the psychological salience of race (Bigler & Liben, 2007) would alter children's implicit attitudes towards identical targets, and whether this shift would be mediated by children's decreased use of race as a basis for social categorization.

Study 1

In Study 1 I tested whether children's implicit attitudes would differ when children construed smiling Black and neutral White targets by emotional expression instead of race. Children (aged 5- to 10-years) were randomly assigned to complete one of two child-friendly measures of implicit attitudes (ch-IATs; Baron & Banaji, 2006; Dunham et al., 2008) with smiling Black and neutral White child targets. In the Race-Construal condition, children were told to categorize these targets by race, whereas in the Emotion-Construal condition, children were told to categorize these targets by emotional expression. In line with the possibility that person construal impacts implicit attitudes, I expected that children would show a greater implicit preference for the smiling Black targets relative to the neutral White targets when they were required to categorize the targets by emotional expression as opposed to race.

Method

Participants

One hundred and twenty-nine non-Black children between the ages of 5- and 10-years (74 female and 55 male) were recruited from a community location to take part in the present research.[1] Two children chose not to complete the entire IAT, two children had trouble following the task, and one child's data were removed because their D score was a numerical outlier (3 standard deviations away from their condition mean) leading to a final sample of 124 participants. The sample included 57 younger children who ranged in age from 5- to 7-years (10 five-year-olds, 27 six-year-olds, 20

[1] An additional two Black children and four multiracial participants with some Black ancestry participated in the study but were not included in the analyses.

seven-year-olds) and 67 older children who ranged in age from 8- to 10- years (23 eight-year-olds, 24 nine-year-olds, and 20 ten-year-olds).[2] The racial makeup of the sample consisted of 87 White participants, 20 East Asian participants, 11 South Asian participants, and 6 multiracial participants (identified as more than one race that did not include Black). Prior to the study, written parental consent for participation was obtained and participants were informed that they could stop the experiment at any time.

Materials

The ch-IAT was similar to the adult IAT (Greenwald et al., 1998; Greenwald et al., 2003) with a few minor modifications designed to make the task child-friendly (see also Williams & Steele, 2013; Steele et al., 2013). Unlike the adult IAT, the stimuli used in the ch-IAT were all pictorial, and the number of trials in each block was reduced. The target concept was represented by four pictures of Black boys with smiling expressions and four pictures of White boys with neutral, non-smiling expressions, see Appendix A. All of the pictures were matched for age and attractiveness. The attribute dimension for both IAT conditions was represented by 8 pictures from the International Affective Picture System (IAPS, Lang, Bradley, & Cuthbert, 2005), which included four pleasant (e.g., sunflowers, kittens, puppies, beautiful landscape) and four unpleasant (e.g., garbage, oil spill, demolished house, landfill) stimuli, see Appendix A.

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[2] In line with what has been done by other research (Augoustinos & Rosewarne, 2001; Bigler & Liben, 1993; Fitzroy & Rutland, 2010; Raabe & Beelmann, 2011) across each study younger children were those who were 7-years of age and younger (5- to 7-years), whereas older children were 8-years of age and older (8- to 10-years). We split children in this way because research suggests that key changes in multiple classification skills and the expression of explicit prejudice typically occur between the ages of 7- and 8-years (Aboud, 2008; Bigler & Liben, 1993; Monteiro, Franca, & Rodrigues, 2009; see Raabe & Beelmann, 2011 for a review).

In each of the conditions a header remained on the screen during the training and critical blocks. For the Race-Construal IAT, in blocks where participants categorized the target concept (faces), the header contained a cartoon face of a White boy on one side of the screen and a Black boy on the other side of the screen. Each of the cartoon faces in the header had their mouths removed so that no emotional expression was visible, see Appendix A. For the Emotion-Construal IAT, the header showed a schematic smiling face on one side of the screen and a schematic neutral face on the other side of the screen. For both IAT conditions, in blocks where participants categorized the attribute concept (pleasant and unpleasant pictures), the header showed a sun (with the word 'pleasant' written above it) on one side of the screen and storm clouds (with the word 'unpleasant' written above it) on the other side of the screen.

Procedure

Participants were randomly assigned to complete one of the two child-friendly Implicit Association Tests (ch-IAT; Baron & Banaji, 2006). In Block 1 of each ch-IAT, participants were introduced to the target concept discrimination. For 8 trials, participants were individually presented with smiling Black and neutral White target faces on the computer screen and were required to categorize them by either race (in the Race-Construal condition) or by emotional expression (in the Emotion-Construal condition) by pressing one of two computer keys. In Block 2, participants categorized the pictures of pleasant and unpleasant stimuli by valence. Blocks 3 and 4 contained the first of two sets of critical trials (8 'practice' and 16 'real') that were presented in counterbalanced order. In one set of critical trials, participants categorized both neutral White faces and pleasant stimuli using one computer key and categorized both

smiling Black faces and unpleasant stimuli using another computer key. In the other set of critical trials, participants categorized neutral White faces and unpleasant stimuli using one computer key, and smiling Black faces and pleasant stimuli using the other key. In Block 5, participants completed 8 trials of the target concept discrimination (faces), but the response keys were reversed. Finally, in Blocks 6 and 7, participants completed the second set of 24 critical trials. A correct response was required on each trial; if the participant pressed the incorrect response key, an "X" appeared underneath the stimulus, and the participant was required to make the correct response. Upon completion of the IAT, each child was debriefed and given a certificate and a sticker as a token of appreciation.

Results

For each participant, an IAT D score was created following the scoring algorithm recommended by Greenwald et al. (2003), by calculating the difference between the mean response latency for the trials in each critical block and dividing by the pooled standard deviation. Consistent with previous research, higher scores indicate a pro-White (relative to Black) bias. D scores for all 4 studies were calculated using the same scoring algorithm.

A 2(Condition: Race-Construal, Emotion-Construal) x 2(Age Group: Younger, Older) ANOVA using D scores as the dependent variable revealed a significant main effect of Condition, $F(1,120) = 138.77$, $p < .001$, such that children in the Emotion-Construal condition had significantly lower pro-White biases ($D = -.62$, $SD = .55$) relative to children in the Race-Construal condition ($D = .36$, $SD = .38$), see Figure 1. The main effect of Age Group, $F(1,120) = .86$, $p = .36$, and the interaction, $F(1,120) = 1.67$, $p = .20$ were not significant.

To further examine this bias, one-sample t-tests comparing mean D scores to 0 were conducted separately for participants in each condition. Children in the Race-Construal condition demonstrated an implicit preference for neutral White faces relative to smiling Black faces, $t(65) = 7.84$, $p < .001$; and this was true for both younger ($D = .38$, $SD = .44$), $t(29) = 4.76$, $p < .001$ and older ($D = .35$, $SD = .32$), $t(35) = 6.48$, $p < .001$ children. By contrast, participants in the Emotion-Construal condition demonstrated an implicit preference for smiling Black faces relative to neutral White faces, $t(57) = -8.56$, $p < .001$; and this was true for both younger, ($D = -.72$, $SD = .59$), $t(26) = -6.30$, $p < .001$ and older ($D = -.53$, $SD = .50$), $t(30) = -5.87$, $p < .001$ children.

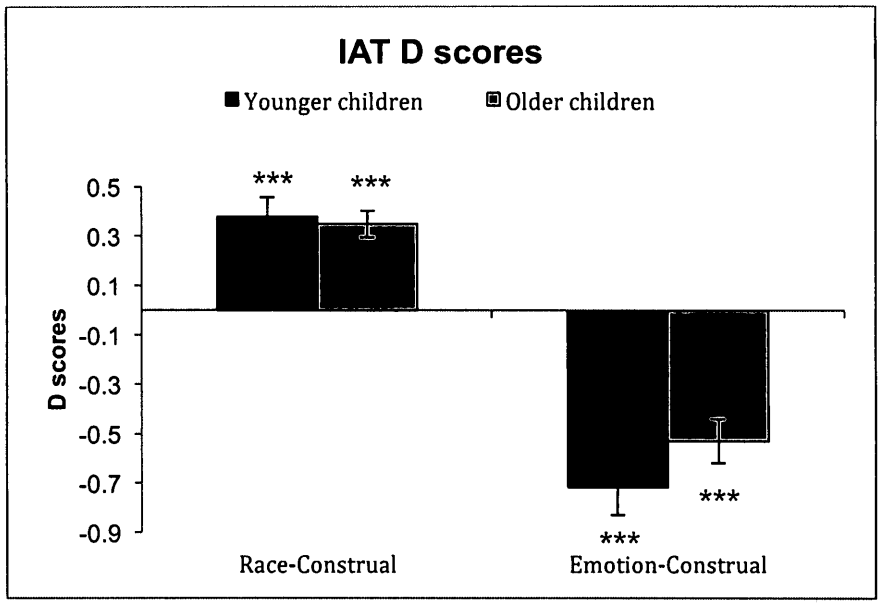

Figure 1. Implicit intergroup attitudes in the Race-Construal and Emotion-Construal conditions. Higher values indicate a greater positivity towards neutral White children relative to smiling Black children. Astericks indicate whether the mean was significantly different from 0.
* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The results of Study 1 provide evidence that person construal impacts children's implicit attitudes. When children construed target faces in terms of their

racial group, they showed an implicit preference for neutral White targets relative to smiling Black targets. Interestingly, this finding emerged despite the fact that these targets also differed systematically by emotional expression in such a way that Black targets displayed more positive affect than White targets. This finding suggests that when targets are viewed through the lens of race, other dimensions may not influence children's implicit attitudes.

Importantly, however, when children construed these targets according to their emotional expressions, they showed a different pattern of bias. When construing targets by their emotional expression, children showed a significant preference for smiling Black targets over neutral White targets. This is an important finding for at least two reasons. First, this is the first study to show that children's implicit attitudes towards Black and White individuals can differ reliably when the targets are viewed through a different lens. Second, to my knowledge, this is the first study in which non-Black children have demonstrated an implicit bias favoring Black (relative to White) targets. Taken together, these results suggest that although children show pro-White biases when construing White and Black targets by race, these biases can change dramatically when children construe individuals according to a competing dimension.

Study 2

The results of Study 1 suggest that the automatic affective associations that targets evoke depend largely on how those targets are construed, with smiling Black targets eliciting more positive affect relative to neutral White targets when they are categorized by their emotional expression. In Study 2 I aimed to replicate and extend these findings by examining children's spontaneous construals and the ensuing

consequences for children's implicit attitudes. Extensive theory and research suggest that adults spontaneously categorize others by race and that racial categories automatically elicit affect (Fazio et al., 1995; Fiske, Lin, & Neuberg, 1999; Fiske & Neuberg, 1990; Payne, et al., 2005). In Study 2, I extended the results of Study 1 by examining whether children would spontaneously categorize smiling Black and neutral White targets by their race or by their emotional expression and whether their construal would impact their implicit attitudes.

Although there is some evidence to suggest that older children may spontaneously attend to race to a lesser degree than adolescents and adults (Williams & Steele, 2013), it was unclear whether an age difference would emerge in younger and older children's spontaneous attention to race as opposed to emotional expression when categorizing smiling Black and neutral White targets on the IAT, and what direction this difference might take. On the one hand, theory and research suggest that explicit racial bias is significantly greater in younger children relative to older children (Aboud, 2008; Rutland et al., 2005; Williams & Steele, 2013; see Raabe & Beelman, 2011 for a meta-analysis), which might imply that younger children spontaneously construe novel individuals by race to a greater extent than older children. On the other hand, other research suggests that the tendency to spontaneously attend to race during person perception increases as children age, as older children have had more time to develop race-based associations (Degner & Wentura, 2010). Furthermore, the decrease in explicit racial bias among older children is at least partially due to the acquisition of anti-prejudice social norms (Rutland et al., 2005; Monteiro et al., 2009) rather than a decreased tendency to spontaneously construe by race. Therefore, it was conceivable that older children

would be equally or more likely to spontaneously construe novel others by race relative to younger children, even if they are less likely to use race-based information when expressing explicit preferences. This possibility was tested in Study 2 and in the subsequent two studies.

Importantly, I hypothesized that regardless of age, children who spontaneously construed by race would show a greater pro-White bias relative to children who spontaneously construed by emotional expression.

Method

Participants

One hundred and seven non-Black children between the ages of 5- and 10-years (54 female and 53 male) were recruited and tested in a community location.[3] One participant chose to end the session during the IAT, two participants had trouble following instructions, two participants' data were not properly recorded due to a computer error, and three participants' data were removed because their D scores were numerical outliers, leading to a final sample of 99 participants. The sample included 46 younger children who ranged in age from 5- to 7-years (15 five-year-olds, 20 six-year-olds, 11 seven-year-olds) and 53 older children who ranged in age from 8- to 10-years (23 eight-year-olds, 16 nine-year-olds, and 14 ten-year-olds). The racial makeup of the sample consisted of 52 White, 17 East/South East Asian, 14 South Asian/Arab, and 15 multiracial participants as well as 1 race-unspecified participant

[3] Six Black children and eight multiracial participants with some Black ancestry participated in the study but were removed from all analyses.

Materials

The target faces used in all 3 IAT conditions were the same faces that were used in the Race-Construal IAT and Emotion-Construal IAT in Study 1.[4] The header for the Spontaneous-Construal IAT showed a cartoon smiling Black boy on one side of the screen and a cartoon neutral White boy on the other side of the screen. Participants were told to press one button if the target "was like" the child on the left, and to press another button if the target "was like" the child on the right.

The Race-Construal IAT and Emotion-Construal IAT were identical to those in Study 1 with one minor change. To make the header of the IATs consistent across conditions, the header in the Race-Construal IAT used the same cartoon faces as the header in the Spontaneous-Construal IAT, but with the mouth of the faces removed so that no emotional expression was visible. The header of the Emotion-Construal IAT used the inner features (eyes, nose and mouth) of the faces used in the header in the Spontaneous-Construal IAT, but without the background head so that the race of the faces was not visible, see Appendix B.

In addition, in order to determine whether participants were construing targets according to race or emotional expression, participants in the Spontaneous-Construal IAT condition completed 5 'construal' trials at the end of their IAT. During these construal trials, the header from the last block of the IAT (with smiling Black and neutral White faces) remained on the screen, but participants were now required to categorize smiling White boy targets (n = 3) and neutral Black boy targets (n = 3) that were matched for age and attractiveness, see Appendix B. Five of these six faces

[4] One of the White neutral target faces (third from the left in Appendix A) was replaced because some participants accidently categorized the face as smiling in the initial single-categorization trials of the Emotion IAT in Study 1. See Appendix B for the replacement face.

were randomly selected for each participant, and appeared on the screen in such a way that they seemed to be part of the last block of trials. Participants were considered to have construed by race if they categorized the majority of the faces (3 or more out of 5) in this construal block by race (e.g., smiling White targets with the neutral White face) and were considered to have construed by emotional expression if they categorized the majority of the faces by emotional expression (e.g., smiling White targets with the smiling Black face).[5]

Procedure

After receiving parental consent, participants were randomly assigned to complete one of the three IATs (Race-Construal, Emotion-Construal, or Spontaneous-Construal). Upon completion of the study, each child was debriefed and given a certificate and a sticker.

Results

To determine whether children's biases would differ by condition, I conducted a 3(Condition: Race-Construal, Emotion-Construal, Spontaneous-Construal) x 2(Age Group: Younger, Older) ANOVA using $\underline{D}$ scores as the dependent variable. This revealed the anticipated main effect of Condition, $\underline{F}(2,93) = 32.92$, $\underline{p} < .001$, see Figure 2. The main effect of Age Group, $\underline{F}(1,93) = .59$, $\underline{p} = .45$, and the interaction, $\underline{F}(2,93) = .60$, $\underline{p} = .55$, were not significant. Post-hoc Fisher LSD tests revealed that pro-White biases among participants in the Emotion-Construal condition were significantly lower than those in both the Race-Construal condition ($\underline{p} < .001$), and the

[5] The construal measure was treated as a dichotomous measure because the distributions were non-normal. As expected, the majority of participants across Studies 2-4 categorized all five faces along the same dimension (e.g., race or emotional expression). In each study, treating this measure as a continuous variable resulted in comparable results.

Spontaneous-Construal condition ($p < .001$). In addition, the bias of participants in the Spontaneous-Construal condition was marginally lower than participants in the Race-Construal condition ($p = .08$).

Consistent with the results from Study 1, one-sample t-tests comparing mean D scores to 0 revealed that children in the Race-Construal condition showed significantly greater implicit positivity towards the neutral White faces relative to smiling Black faces ($D = .29$, $SD = .31$), $t(33) = 5.42$, $p < .001$; and this was true for both younger ($D = .30$, $SD = .33$), $t(15) = 3.65$, $p < .01$ and older ($D = .29$, $SD = .31$), $t(17) = 3.89$, $p = .001$ children. By contrast, participants in the Emotion-Construal condition again demonstrated a significantly greater implicit positivity towards smiling Black faces relative to neutral White faces ($D = -.60$, $SD = .57$), $t(31) = -5.93$, $p < .001$; and this was true for both younger ($D = -.72$, $SD = .56$), $t(13) = -4.83$, $p < .001$ and older ($D = -.50$, $SD = .58$), $t(17) = -3.70$, $p < .01$ children.

Finally, participants in the Spontaneous-Construal condition, who were not given explicit instructions about how to construe targets, demonstrated no reliable implicit bias ($D = .09$, $SD = .49$), $t(32) = 1.06$, $p = .30$; and this was true for both younger ($D = .08$, $SD = .62$), $t(15) = .54$, $p = .60$ and older ($D = .09$, $SD = .33$), $t(16) = 1.18$, $p = .26$ children.

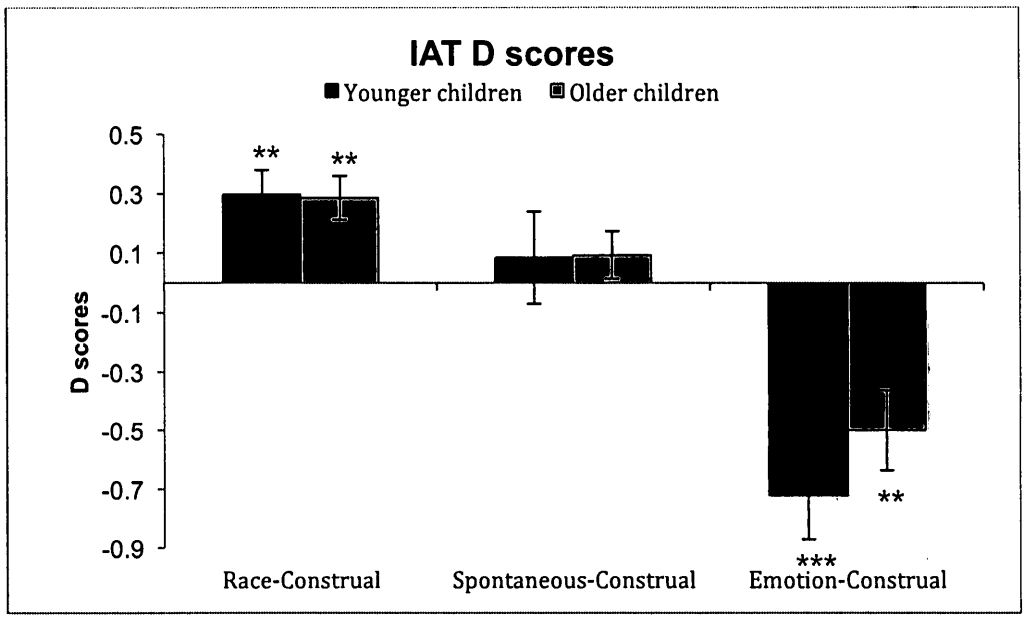

Figure 2. Implicit intergroup attitudes among participants in the Race-Construal, Spontaneous-Construal and Emotion-Construal conditions. Higher values indicate a greater positivity towards neutral White children relative to smiling Black children. Astericks indicate whether the mean was significantly different from 0.
* $p < .05$, ** $p < .01$, *** $p < .001$

To gain a better understanding of whether children in the Spontaneous-Construal condition were predominantly attending to race or emotional expression when they completed their IAT, I calculated whether each child had categorized the majority (at least 3) of the 5 smiling White and neutral Black targets in the construal trials by race (e.g., using the key for neutral White faces when a smiling White face appeared) or by emotional expression (e.g., using the key for smiling Black faces when a smiling White face appeared). To test whether children's tendency to attend to race or emotional expression differed by age, I conducted a chi-square test of independence. This revealed a significant relationship between Age Group and Target Construal, $X^2 = 5.71$, $p = .02$. Younger participants were equally likely to construe targets by race ($n = 8$) as compared to emotional expression ($n = 8$), $X^2 = .00$,

$p = 1.00$, whereas older participants were significantly more likely to construe targets by race ($n = 15$) as compared to emotional expression ($n = 2$), $X^2 = 9.94$, $p < .01$.[6]

Importantly, and as expected, participants who spontaneously construed targets by race ($D = .25$, $SD = .34$) in the Spontaneous-Construal condition had significantly greater pro-White bias relative to participants who construed by emotional expression ($D = -.27$, $SD = .59$), $t(31) = -3.21$, $p < .01$

Discussion

The results of Study 2 provide additional evidence that person construal impacts children's implicit attitudes. Consistent with Study 1, children who construed targets according to race showed an implicit preference for the neutral White children relative to the smiling Black children. By contrast, children who construed these same targets by emotional expression showed a very different pattern of bias; they had an implicit preference for smiling Black children relative to neutral White children. In addition, in line with our expectation that person construal impacts implicit attitudes, children in the Spontaneous-Construal condition who spontaneously construed targets by race showed a significantly greater implicit pro-White bias than children who spontaneously construed targets by emotional expression.

Interestingly, the results of the Spontaneous-Construal condition also indicate that older children were more likely to spontaneously construe targets by race on this measure than by emotional expression, whereas younger children are equally likely to

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[6] Despite the fact that fifteen out of seventeen older children construed targets by race, this group did not demonstrate a pro-White bias overall ($D = .09$, $SD = .33$), $t(16) = 1.18$, $p = .26$. The two older children that construed by emotional expression demonstrated a strong implicit preference for smiling Black children relative to neutral White children ($D = -.52$, $SD = .10$), $t(1) = -7.63$, $p = .08$ which brought down the overall D score of older children. The fifteen older children who construed by race demonstrated a significant pro-White bias ($D = .18$, $SD = .25$), $t(14) = 2.74$, $p = .02$.

construe by either dimension. This finding is consistent with other research suggesting that the tendency to spontaneously attend to race during person perception increases as children age (Degner & Wentura, 2010). One possible reason for this increased spontaneous categorization by race is that as children grow older, they become more exposed to race-based categorizations in daily life, which may lead them, like adults, to be more likely to automatically attend to race. However, it is also possible that this increased attention to race might be less likely to emerge when the contrasting dimension is a competing social category as opposed to potentially fleeting emotional expression. This is a possibility that I examined in Study 3.

Study 3

The results of Studies 1 and 2 provide support that children's implicit racial biases can be attenuated when children construe smiling Black and neutral White targets according to emotional expression instead of race. Unlike race, which is an enduring social category, emotional expression often conveys a temporary state that can be context dependent and can change rapidly. Although some research suggests that emotional expression can be used to make spontaneous trait inferences about internal qualities such as sociability, sincerity, politeness and successfulness (Beaupré & Hess, 2003; Dougherty, 2006), the associations that emotional expressions evoke may be qualitatively different from the network of associations elicited from a competing social category, such as gender. Therefore, the goal of Study 3 was to extend the findings from Studies 1 and 2 by determining whether children's implicit biases would similarly be reduced when they construe individuals according to a competing social category, specifically gender.

I selected gender because theory and research suggest that this is an important and salient social category for children. Bigler and Liben (1993) found that 4- to 9-year-old children were more likely to sort pictures by gender than by race or emotional expression when asked to sort multiply categorizable faces into two piles of faces that "go together", suggesting that gender is a particularly salient social category at these ages. A more recent study with 7- to 12-year-olds found that the tendency for children to spontaneously construe novel targets by gender decreases as children age, suggesting that gender is a relatively more salient social category in early childhood (Bennett, Sani, Hopkins, Agostini, & Malucchi, 2000). In addition, research suggests that children express more positive attitudes towards same-sex peers (Cvencek, Greenwald, & Meltzoff, 2011; Martin, 1989; Powlishta, 1995; see Martin & Ruble, 2010 for a review); they state that they like novel same-sex peers more than other-sex peers (Cvencek et al., 2011; Martin, 1989), and rate positive traits as more descriptive of members of their own-sex as compared to other-sex peers (Powlishta, 1995). Recent research also suggests that girls (but not boys) show implicit same-sex biases as early as 4-years of age (Cvencek et al., 2011).

The primary goal of Study 3 was to test the robustness of our effects from Studies 1 and 2 by examining the effect of person construal on children's implicit attitudes towards novel same-sex Black and other-sex White targets. Building on the findings from Studies 1 and 2, I predicted that children would show more positive implicit attitudes towards same-sex Black, as opposed to other-sex White, targets when they construed them in terms of gender as opposed to race. Such a finding would suggest that the reduced pro-White biases found in Studies 1 and 2 were not due to the fact that they construed targets by emotional expression per se, but rather

because they construed by a competing dimension other than race. In addition, as in Study 2, I examined whether children would be more likely to spontaneously construe targets by gender or race, and whether children who spontaneously construe by gender would show lower pro-White biases relative to children who spontaneously construe by race.

Method

Participants

One hundred and eighty-four non-Black children between the ages of 5- and 10-years (82 female and 102 male) participated in a community location.[7] Five participants had trouble understanding and/or following task instructions, two participants had more than 10% of IAT trials with a response time of less than 300ms, one participant's data were not properly recorded due to a computer error, and three participants' data were removed because their D scores were numerical outliers, leading to a final sample of 173 participants. The sample included 91 younger children who ranged in age from 5- to 7-years (28 five-year-olds, 35 six-year-olds, 28 seven-year-olds) and 82 older children who ranged in age from 8- to 10-years (20 eight-year-olds, 35 nine-year-olds, and 27 ten-year-olds). The racial makeup of the sample consisted of 97 White participants, 29 East/South East Asian participants, 33 South Asian/Arab participants, 9 multiracial participants, 3 Latin American participants and 2 participants of other ethnicities.

[7] Three Black children and four multiracial participants with some Black ancestry participated in the study but were removed from all analyses.

Materials

Three types of child friendly IATs were administered during this study: a Race-Construal IAT, a Gender-Construal IAT and a Spontaneous-Construal IAT. For each IAT, the target faces included 4 same-sex Black children and 4 other-sex White children; female participants saw Black girls and White boys, whereas male participants saw Black boys and White girls. The target faces were matched for age, attractiveness and emotional expression. The attribute dimension for all IAT conditions was represented by a new set of 8 gender-neutral pictures which included four pleasant (e.g., waterslides, beach setting, puppies, ice cream cone) and four unpleasant (e.g., medicine, factory pollution, a needle, oil spill) stimuli, see Appendix C.

The header used for the Race-Construal IAT and the Gender-Construal IAT were identical for both female and male participants and each header contained cartoon images, see Appendix C. For the Race-Construal IAT, the header contained a White girl and White boy on one side of the screen, and a Black girl and Black boy on the other side of the screen. For the Gender-Construal IAT, the header contained a White girl and Black girl on one side of the screen and a White boy and Black boy on the other side of the screen. For the Spontaneous-Construal IAT, female participants saw a header with a Black girl on one side of the screen and a White boy on the other side of the screen; male participants saw a header with a Black boy on one side of the screen and a White girl on the other side of the screen.

As in Study 2, a construal block was added to the end of the Spontaneous-Construal IAT that appeared to participants to be part of the last block of trials. Participants were presented with 5 trials containing same-sex White targets and other-

sex Black targets. The stimuli categorized by boys in the main blocks of their IAT (Black boys and White girls) were used as the construal block stimuli for girls. Similarly, the stimuli categorized by girls in the main blocks of their IAT (Black girls and White boys) were used as the construal block stimuli for boys. As in Study 2, participants were considered to have construed by race if they categorized the majority of faces (3 or more out of 5) in this construal block by race (e.g., same-sex White targets with the other-sex White face) and were considered to have construed by gender if they categorized the majority of the faces by gender (e.g., same-sex White targets with the same-sex Black face).

Procedure

After receiving parental consent, participants were randomly assigned to complete one of the three ch-IATs (Race-Construal, Gender-Construal or Spontaneous-Construal). Upon completion of the study, children were debriefed and given a certificate and a sticker.

Results

A 3(Condition: Race-Construal, Gender-Construal, Spontaneous-Construal) x 2(Age Group: Younger, Older) ANOVA using D scores as the dependent variable revealed a significant main effect of Condition, $F(2,167) = 17.38$, $p < .001$, see Figure 3. The main effect of Age Group, $F(1,167) = .27$, $p = .60$ and interaction, $F(2,167) = 1.38$, $p = .26$ were not significant. Post-hoc Fisher LSD tests revealed that participants in the Race-Construal condition had a significantly greater pro-White bias than participants in the Gender-Construal ($p < .001$) and Spontaneous-Construal ($p < .001$) conditions. The bias of participants in the Gender-Construal condition and the Spontaneous-Construal condition did not reliably differ ($p = .80$).

Consistent with the results from Studies 1 and 2, children in the Race-Construal condition demonstrated an implicit preference for other-sex White targets relative to same-sex Black targets ($\underline{D}$ = .25, $\underline{SD}$ = .38), $\underline{t}(61) = 5.30$, $\underline{p} < .001$; and this was true for both younger ($\underline{D}$ = .30, $\underline{SD}$ = .38), $\underline{t}(33) = 4.50$, $\underline{p} < .001$ and older ($\underline{D}$ = .20, $\underline{SD}$ = .36), $\underline{t}(27) = 2.90$, $\underline{p} < .01$ children. By contrast, participants in the Gender-Construal condition demonstrated an implicit preference for same-sex Black targets relative to other-sex White targets ($\underline{D}$ = -.12 , $\underline{SD}$ = .36), $\underline{t}(64) = -2.62$, $\underline{p} = .01$. This effect was marginally significant for both younger ($\underline{D}$ = -.14, $\underline{SD}$ = .42), $\underline{t}(35) = -1.95$, $\underline{p} = .06$ and older ($\underline{D}$ = -.09, $\underline{SD}$ = .27), $\underline{t}(28) = -1.84$, $\underline{p} = .08$ children.

Finally, participants in the Spontaneous-Construal condition, who were not given explicit instructions about which social category to use to categorize targets, demonstrated no reliable implicit bias ($\underline{D}$ = -.10 , $\underline{SD}$ = .42), $\underline{t}(45) = -1.61$, $\underline{p} = .11$. This was true for both younger ($\underline{D}$ = -.18, $\underline{SD}$ = .55), $\underline{t}(20) = -1.48$, $\underline{p} = .15$ and older ($\underline{D}$ = -.03, $\underline{SD}$ = .25), $\underline{t}(24) = -.65$, $\underline{p} = .52$ children.[8]

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[8] All of the analyses were also run with Participant Sex as a factor. A 3(Condition: Race-Construal, Gender-Construal, Spontaneous-Construal) x 2(Age Group: Younger, Older) x 2(Participant Sex: Female, Male) ANOVA using $\underline{D}$ scores as the dependent variable revealed a main effect of Participant Sex, $\underline{F}(1,161) = 5.09$, $\underline{p} = .03$, that was qualified by reliable Sex by Condition, $\underline{F}(2,161) = 6.50$, $\underline{p} < .01$ and Sex by Age Group, $\underline{F}(1,161) = 7.55$, $\underline{p} < .01$ interactions as well as a marginal 3-way interaction, $\underline{F}(2,161) = 2.29$, $\underline{p} = .10$. Follow-up 3(Condition: Race-Construal, Gender-Construal, Spontaneous-Construal) x 2(Participant Sex: Female, Male) ANOVAs were run within each age group. For older children, only a main effect of Condition emerged, $\underline{F}(2,76) = 6.13$, $\underline{p} < .01$. There was no main effect of Sex or interaction between Condition and Participant Sex, $\underline{F}$s < 2.02, $\underline{p}$s > .13. For younger participants, this ANOVA produced a main effect of Participant Sex, $\underline{F}(1,85) = 10.67$, $\underline{p} < .01$, and a main effect of Condition, $\underline{F}(2,85) = 11.92$, $\underline{p} < .001$, which were qualified by a significant interaction between Condition and Participant Sex, $\underline{F}(2,85) = 5.93$, $\underline{p} < .01$. Consistent with previous research with young children (Cvencek et al., 2011), post-hoc t-tests revealed significant sex differences for the Gender-Construal condition, whereby young female participants' same-sex bias was significantly stronger ($\underline{D}$ = -.27, $\underline{SD}$ = .44) than the bias of young male participants, ($\underline{D}$ = .05, $\underline{SD}$ = .34), $\underline{t}(34) = -2.35$, $\underline{p} = .03$. Similarly, young female participants' same-sex bias was significantly stronger in the Spontaneous-Construal condition ($\underline{D}$ = -.49, $\underline{SD}$ = .46) than the bias of young male participants ($\underline{D}$ = .16, $\underline{SD}$ = .44), $\underline{t}(19) = -3.32$, $\underline{p} < .01$. There were no sex differences among young participants in the Race-Construal condition.

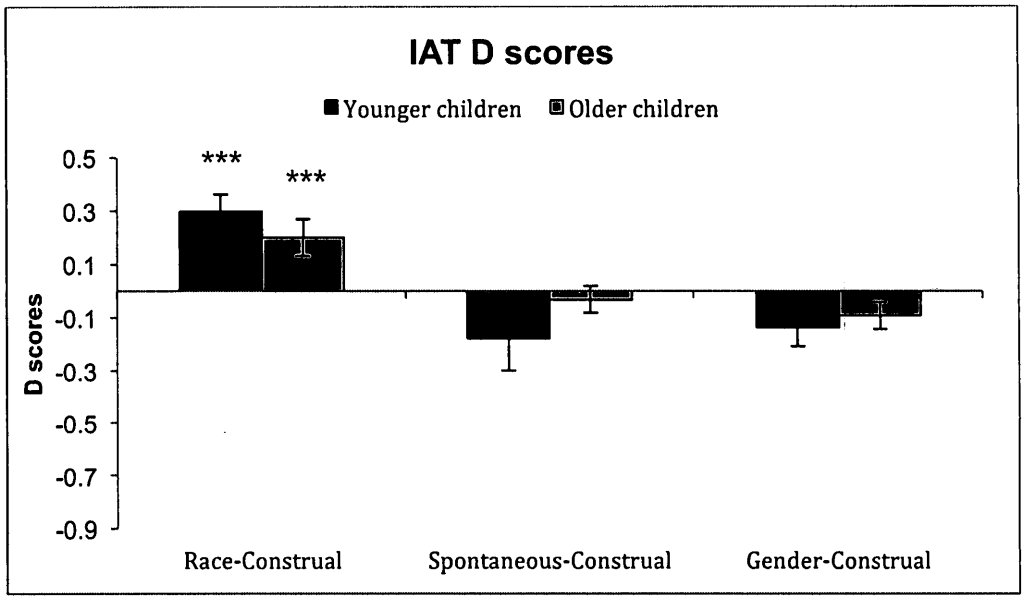

Figure 3. Implicit intergroup attitudes among participants in the Race-Construal, Spontaneous-Construal and Gender-Construal conditions. Higher values indicate a greater positivity towards other-sex White children relative to same-sex Black children. Astericks indicate whether the mean was significantly different from 0.
* $p < .05$, ** $p < .01$, *** $p < .001$

In order to gain a better understanding of whether children in the Spontaneous-Construal condition were predominantly attending to race or gender when they completed their IAT, I examined how they categorized other-sex Black and same-sex White targets in the construal block. As noted earlier, participants were considered to have construed by race if they categorized the majority of faces (3 or more out of 5) by race, whereas participants were considered to have construed by gender if they categorized the majority of faces by gender. A chi-square test of independence revealed a marginally significant relationship between Participant Age Group and Target Construal, $X^2 = 3.39$, $p = .07$ such that younger participants construed targets by gender as opposed to race marginally more often than older participants. Follow-up analyses revealed that younger participants were significantly more likely to construe targets by gender ($n = 19$) as compared to race ($n = 2$), $X^2 =$

13.76, $p < .001$, whereas older participants were marginally more likely to construe targets by gender ($n = 17$) as compared to race ($n = 8$), $X^2 = 3.24$, $p = .07$.

Importantly, as expected, participants who spontaneously construed targets by gender in the Spontaneous-Construal condition had significantly lower pro-White biases ($D = -.17$, $SD = .39$) relative to participants who construed by race ($D = .15$, $SD = .45$), $t(44) = 2.25$, $p = .03$.

Discussion

The results of Study 3 provide additional evidence that person construal impacts children's implicit attitudes and extends the results of Studies 1 and 2 to the novel and stable competing social category of gender. Consistent with the results from the first two studies, when same-sex Black targets and other-sex White targets were categorized by race, children showed a significant implicit preference for other-sex White targets relative to same-sex Black targets. This finding provides further evidence for the robustness of pro-White bias among children. When individuals were seen through the lens of race, children showed an implicit pro-White bias even when the targets shared an important and relevant competing social category like gender. Importantly, however, participants in the Gender-Construal condition, who construed the same targets by gender, produced significantly different attitude estimates, showing instead an implicit preference for same-sex Black targets relative to other-sex White targets. These results are consistent with the possibility that children's implicit attitudes are dependent on person construal and rule out the possibility that the findings of Studies 1 and 2 are specific to competing emotional expressions. Rather, these participants demonstrated reduced racial bias because of the positive evaluations that the competing construal produced.

An important additional finding to emerge from Study 3 is that both older and younger children were more likely to spontaneously construe individuals by gender than by race. Although previous research by Bigler and colleagues (Bigler & Liben, 1993) has demonstrated that children are more likely to sort targets by gender than by race on an explicit sorting task, this is the first demonstration that this attention to gender over race might also emerge on an implicit measure, providing additional evidence that gender is a salient and important aspect of social identity for children (Martin & Ruble, 2010). As expected, children who spontaneously construed by gender as opposed to race showed significantly greater implicit positivity towards same-sex Black targets. These findings are important as they highlight the power of spontaneous person construal to impact the nature and direction of the affective associations that are generated in response to novel targets.

Study 4

The results from Studies 1-3 demonstrate that the dimension that children use to construe others during person perception influences their automatic affective responses towards multiply categorizable targets. This was demonstrated both by manipulating the way that children construed target faces and also by examining individual differences in children's spontaneous person construal. In Study 4 I sought to extend these findings by examining whether a brief intervention, in which an adult made functional use of emotional expression, could similarly impact children's construals and their ensuing affective responses.

Given the vast complexities of daily life, there are many factors that can influence the dimensions that children spontaneously use to construe others, and according to the Developmental Intergroup Theory (DIT; Bigler & Liben, 2006,

2007), children are more likely to spontaneously construe others by social categories that are psychologically salient. One way to make a dimension salient to children is to explicitly label and use that dimension to group people (Bigler & Liben, 2006; 2007). For example, by explicitly referring to children in a classroom as "boys and girls", or by separating boys and girls for gym class, teachers may increase the psychological salience of gender for children. In the current study I examined the impact of explicit labeling on children's implicit attitudes towards multiply categorizable targets. To accomplish this, children were randomly assigned to either an Intervention or a Control condition, and were then asked to complete the Spontaneous-Construal IAT used in Study 2, containing smiling Black and neutral White target faces. Prior to completing the IAT, children in the Intervention condition watched an adult explicitly use emotional expression to sort racially diverse cards, whereas children in the Control condition watched an adult sort a non-social set of cards by shape. I predicted that children in the Intervention condition would be more likely to spontaneously construe IAT targets by emotional expression, which would in turn lead to a reduced pro-White bias.

Methods

Participants

One hundred and twenty-two non-Black children between the ages of 5- and 10-years (51 female and 71 male) were recruited from a community location to take part in the present research.[9] One participant had trouble completing the IAT, two participants ended their testing session before completing the IAT, two participants

[9] An additional two Black children and six multiracial participants with some Black ancestry participated in the study but were removed prior to any analyses.

were noticeably distracted throughout the experiment, and one participants' data were removed because their D score was a numerical outlier, leading to a final sample of 116 participants. The sample included 57 younger children who ranged in age from 5- to 7-years (17 five-year-olds, 23 six-year-olds, 17 seven-year-olds) and 59 older children who ranged in age from 8- to 10-years (19 eight-year-olds, 28 nine-year-olds, and 12 ten-year-olds). The racial makeup of the sample consisted of 61 White participants, 23 East/South East Asian participants, 18 South Asian/Arab participants, 1 Aboriginal Canadian participant, 9 multiracial participants, 3 Latin American participants and 1 participant of another ethnicity.

Materials

Salience intervention. For the Intervention condition, stimuli consisted of eight colour photographs of child faces that varied by race (4 White, 2 Black, 1 South Asian, 1 East Asian), gender (4 male, 4 female) and emotional expression (4 smiling, 4 neutral), see Appendix D. For the Control condition, stimuli consisted of eight colour pictures of shapes that varied along colour (4 green, 4 orange), size (4 big, 4 small) and shape (4 triangles, 4 circles).

Child-Friendly Implicit Association Test (ch-IAT). The ch-IAT was identical to the Spontaneous-Construal IAT in Study 2.

Procedure

After receiving parental consent, participants were randomly assigned to one of the two conditions (Intervention or Control). In the Intervention condition, the experimenter showed participants the photographs and said "Here are a bunch of faces - I'm going to sort them by their emotion. The faces that are smiling go together in one group over here, and the faces that are not smiling go together in a

different group over here", and proceeded to sort them by emotional expression. In the Control condition, the experimenter gave comparable instructions, but sorted the pictures of triangles and circles according to their shape. In both conditions, after the cards were sorted, the experimenter said "Now take a look at how I sorted these faces/cards because I might ask you about this later", and allowed the child to examine the cards for 3 seconds. Following the salience intervention, all children completed the Spontaneous-Construal IAT. Upon completion of the study, children were debriefed and given a certificate and sticker.

Results

A 2(Condition: Intervention, Control) x 2(Age Group: Younger, Older) ANOVA using $\underline{D}$ scores as the dependent variable revealed a significant main effect of Condition, $\underline{F}(1, 112) = 92.04$, $\underline{p} < .001$. Children in the Intervention condition had significantly lower pro-White biases ($\underline{D} = -.73$, $\underline{SD} = .52$) relative to children in the Control condition ($\underline{D} = .12$, $\underline{SD} = .44$), see Figure 4. The main effect of Age Group, $\underline{F}(1, 112) = .74$, $\underline{p} = .39$, and the interaction between Condition and Age Group, $\underline{F}(1, 112) = .47$, $\underline{p} = .50$ were not significant.

One-sample t-tests comparing mean D scores to 0 were conducted separately for participants in each condition. Children in the Control condition demonstrated a significant preference for neutral White targets relative to smiling Black targets, $\underline{t}(59) = 2.19$, $\underline{p} = .03$. By contrast, children in the Intervention condition showed a reliable preference for smiling Black targets relative to neutral White targets, $\underline{t}(55) = -10.60$, $\underline{p} < .001$.

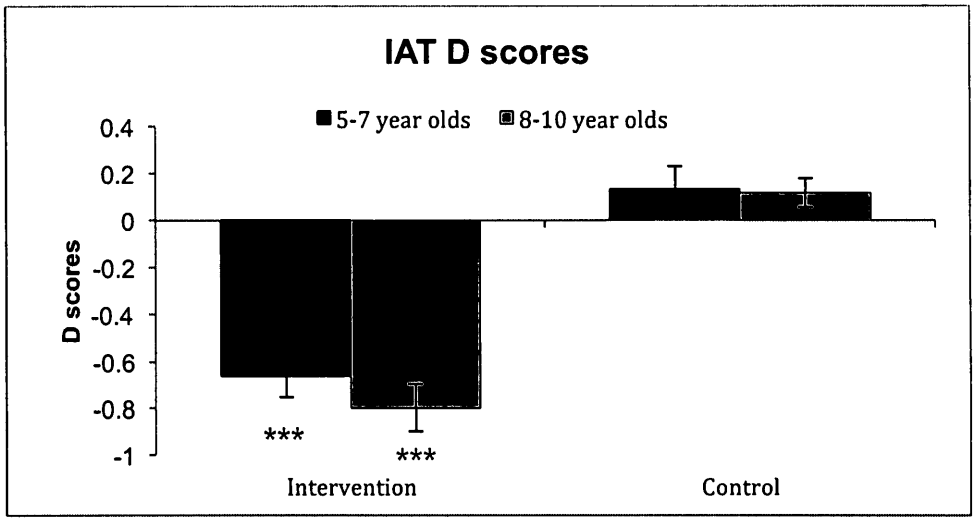

Figure 4. Implicit intergroup attitudes among participants in the Intervention and Control conditions. Higher values indicate a greater positivity towards neutral White children relative to smiling Black children. Astericks indicate whether the mean was significantly different from 0.
* $p < .05$, ** $p < .01$, *** $p < .001$

Mediation analysis

To determine if the attenuated pro-White biases among children in the Intervention condition were due to children in this condition being more likely to spontaneously construe targets by emotional expression, I conducted mediational analyses following the current recommendations (Baron & Kenny, 1986; Bollen & Stine, 1990; MacKinnon, Fairchild, & Fritz, 2007; Preacher & Hayes, 2004; Preacher & Selig, 2012; Shrout & Bolger, 2002); see Figure 5.[10] First I examined the path between Condition and Target Construal and tested whether Condition (dummy coded as Control condition = 0; Intervention condition = 1) predicted Target Construal (dummy coded as race construal = 0; emotional-expression-construal = 1) using a logistic regression. As expected, condition significantly predicted Target Construal ($B = 2.48$, $p < .001$) with participants in the Intervention condition being 11.96 times

[10] As there was no effect of Age Group on Implicit Attitudes, age was not included as a predictor in the mediation analysis.

more likely to construe by emotional expression than participants in the Control condition. Specifically, 77% of participants in the Intervention condition construed by emotional expression, whereas only 22% of participants in the Control condition construed in this way. Next, I examined whether Condition predicted Implicit Attitudes using linear regression, and found that Condition also emerged as a significant predictor of Implicit Attitudes, ($\underline{B}$ = -.86, $\underline{p}$ < .001). To examine the effect of Target Construal on Implicit Attitudes, controlling for Condition, both Target Construal and Condition were simultaneously entered into a linear regression analysis as predictors of Implicit Attitudes. Again, consistent with my expectations, Target Construal predicted Implicit Attitudes ($\underline{B}$ = -.26, $\underline{p}$ = .01) such that participants who construed by emotion had significantly lower pro-White biases ($\underline{D}$ = -.63, $\underline{SD}$ = .57) than those who construed by race ($\underline{D}$ = .03, $\underline{SD}$ = .54).

In line with current recommendations, to test for mediation (MacKinnon, Lockwood, & Williams; 2004; MacKinnon et al., 2007; Preacher & Hayes, 2004; Preacher & Selig, 2012), I next conducted a Monte Carlo resampling simulation with 20,000 resamples and constructed a confidence interval for the indirect effect using the interactive calculator created by Selig and Preacher (2008, June; Preacher & Selig, 2012). This method uses the parameter estimates and standard errors of path a (the relationship between Condition and Target Construal) and path b (the relationship between Target Construal and Implicit Attitudes), to generate a sampling distribution of the product of path a and b (the indirect effect of Condition on Implicit Attitudes), by randomly sampling from the current sample a large number of times. The distribution of the a*b relationship is then used to estimate a confidence interval

around the indirect effect and mediation is indicated if the confidence interval falls outside of zero.

The Monte Carlo analysis produced a 95% confidence interval ranging from -1.27 to -0.14, indicating significant mediation. Therefore, the lower implicit bias among participants in the Intervention condition (relative to the Control condition) emerged because participants in the Intervention condition were significantly more likely to construe targets according to emotional expression instead of race.

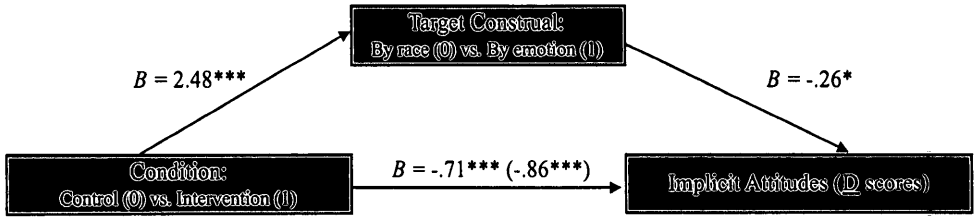

Figure 5. Mediation of the relationship between Condition and Implicit Attitudes (D scores) . B is the unstandardized beta weight associated with the effect, with numbers in parentheses indicating the beta weight before target construal was included in the model. Higher D scores indicate greater positivity towards neutral White children relative to smiling Black children.
* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The results of Study 4 extend my previous findings by demonstrating that a brief intervention can change children's implicit attitudes towards multiply categorizable targets, by changing the way that these targets are construed. After watching an experimenter explicitly use emotional expression to categorize faces, participants in the Intervention condition had significantly lower pro-White biases towards smiling Black and neutral White target faces relative to participants in the Control condition. A mediation analysis confirmed that the reduced pro-White bias among participants in the Intervention condition was due to the fact that these participants were more likely to construe individuals according to their emotional

expression (instead of their race) as compared to participants in the Control condition. This finding is important as it points to the influence that adults can have in guiding children's attention to important and meaningful dimensions during person perception.

General Discussion

Research has repeatedly demonstrated that non-Black children show a consistent pro-White bias on child-friendly versions of the IAT (Baron & Banaji, 2006; Dunham, et al., 2006, 2008; Newheiser & Olson, 2012; Rutland, et al. 2005; Sinclair et al., 2005; Steele et al., 2013; Williams & Steele, 2013). One important question to emerge from these initial findings is whether there are conditions under which children's implicit positivity towards White over Black targets can be eliminated or reversed. To address this question, in the current set of studies I examined whether children would demonstrate a pro-White bias when they construed Black and White targets by a dimension other than race. To accomplish this goal, I modified a paradigm previously used with adults (Mitchell et al., 2003) by asking children to complete a child-friendly IAT (ch-IAT; Baron & Banaji, 2006) that contained smiling Black and neutral White (or, in Study 3, same-sex Black and other-sex White) targets. Depending on their condition, children were asked to categorize targets by race or by emotional expression (or, in Study 3, by gender). When children construed targets by race, they demonstrated an implicit pro-White bias. Unlike previous research that has shown pro-White bias among children (Baron & Banaji, 2006; Dunham et al., 2008; Williams & Steele, 2013), the bias found in the current studies emerged despite the fact that the Black child targets in our studies were either smiling (Studies 1, 2 and 4) or of the same sex as the participant (Study 3), whereas

the White child targets had neutral expressions or were of the opposite sex. These findings suggest that when children view targets through the lens of race, they reliably show pro-White biases.

Importantly, however, when children construed these targets by emotional expression (or gender), they demonstrated an implicit preference for smiling Black (or same-sex Black) targets relative to neutral White (or other-sex White) targets. Consistent with the APE model (Gawronski & Bodenhausen, 2006), these results suggest that among children, the pattern of associations that are automatically activated upon encountering a target are strongly influenced by the way that the target is construed. It is important to note that this is the first study to demonstrate that children's implicit racial attitudes are subject to contextual variability, and that the typical racial bias found among children can be altered by contextual cues.

In the current research I found that both younger (aged 5- to 7-years) and older (aged 8-to 10-years) children demonstrated reliably different implicit racial attitudes when they construed targets along dimensions other than race. Although previous research suggests that younger children's racial biases might be more rigid than older children's (Aboud, 2003, 2008; Bigler & Liben, 1992), in the current research both younger and older children's implicit attitudes were similarly influenced by the way in which others were construed. Despite this lack of age-related difference, additional research would help to determine whether there are ages at which implicit attitudes are more likely to be affected by the non-race related aspects of others. Since adolescents and adults have the cognitive ability to simultaneously construe individuals by more than one dimension, their implicit attitudes may be relatively more attuned to the multiple aspects of others' identities relative to children's.

Alternatively, it is possible that human cognition has evolved such that implicit attitudes are predominantly influenced by the one dimension that people use to construe others as a way to reduce cognitive load (Macrae, Milne, & Bodenhausen, 1994; Macrae et al., 1995). It is also possible that adults have had more time to acquire race-related beliefs and their race-related biases might therefore be more likely to influence their implicit attitudes, even when targets are viewed through a different lens. By increasing our understanding of the stage in development when target construal has the greatest impact on implicit attitudes we will be in a better position to understand how and when racial biases can be overcome. If target construal influences the implicit attitudes of children to a greater extent than adults', it might be particularly important to help teach children to focus on relevant, shared aspects of identity when encountering novel individuals so that positive evaluations can be formed.

Perhaps most importantly, the results from Study 4 provide evidence that adults can reduce the tendency for children to construe others by race by making a competing dimension psychologically salient - a finding that is consistent with previous theorizing by Bigler and Liben (2007). Children who watched an adult explicitly label and categorize people according to their emotional expression were subsequently significantly more likely to spontaneously construe novel individuals according to emotional expression instead of race, which in turn led to participants to associate greater positivity with smiling Black faces (relative to neutral White faces) than participants in a control group. This finding is consistent with the possibility that children are more likely to exhibit implicit racial biases in contexts where race is a salient dimension; but also suggests that adults can reduce the likelihood that children

will construe novel others by race by increasing the salience of other relevant dimensions.

An additional goal of the current research was to examine the extent to which children spontaneously use race to construe novel individuals, relative to emotional expression or gender. When children were not given any instruction about how to construe targets in the ch-IAT, children were overall more likely to spontaneously construe by race than by emotional expression. Although this may seem counterintuitive, given that emotional expression can provide useful information about the current state and intentions of others (Abe et al., 2002; Cacioppo, Petty, Losch, & Kim, 1987; Ekman, Davidson, & Friesen, 1990; Ekman, Sorensen, & Friesen, 1969; see Hess, Beaupré, & Cheung, 2002 for a review), this finding is consistent with theories that argue that race is a 'privileged' social category that, along with gender and age, is likely to be attended to automatically (Brewer, 1988; Fiske et al., 1999). Interestingly, when targets differed by race and gender, children were more likely to spontaneously construe by gender than by race, providing additional support that gender may be a particularly important social category to children (Bigler & Liben, 1993; Martin & Ruble, 2010). In addition, older children were more likely to spontaneously attend to race (relative to either emotional expression or gender) than younger children. This finding is consistent with the possibility that spontaneous racial categorization during the early phases of person perception increases as children age (Degner & Wentura, 2010) – possibly as a result of increased exposure to race-based categorizations in daily life.

Conclusions

When we meet new people, the affective responses that are automatically evoked will depend largely on our person construals (Barden, Maddux, Petty, & Brewer, 2004; Mitchell et al., 2003; Rudman & Kilianski, 2000; see Gawronski & Bodenhausen, 2006 for a review). These automatic associations can influence our behaviours toward others (Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001; see Greenwald, Poehlmann, Uhlmann, & Banaji, 2009 for a meta-analysis), and ultimately shape our conscious evaluations (Gawronski & Bodenhausen, 2006). Until now, research has suggested that children in societies around the world have more negative automatic associations activated when they encounter Black, as compared to White, others – possibility due to their acquired knowledge that Whites have a higher social status than Blacks in most societies (Baron & Banaji, 2006; Dunham et al., 2006; Newheiser & Olson, 2012; Rutland, et al., 2005; Steele et al., 2013; Williams & Steele, 2013) and the affective associations that these differences in status have created. This finding may lead some to conclude that implicit racial prejudice among children is inevitable.

The current research provides a more hopeful outlook on children's implicit attitudes. While it appears that children do in fact have more negative implicit attitudes of Blacks relative to Whites when they construe them according to race, these racial biases do not emerge when targets are viewed through a different lens. Instead, the affective reactions that are automatically activated are related to the dimension that they use to construe. The results from Study 4 further suggest that adults can direct the dimensions to which children attend through the use of explicit labeling. In contexts where race is not a salient dimension, children may be less

likely to spontaneously categorize others by race, and thus, should be less likely to activate race-based associations.

Although these results may initially seem to suggest that adults should always downplay the salience and importance of race with children, or take a 'colorblind' approach (Apfelbaum, Pauker, Sommers, & Ambady, 2010; Holoien & Shelton, 2012; Purdie-Vaughns, Steele, Davies, Ditlmann, & Crosby, 2008), I believe that a great deal of caution must be taken in drawing this conclusion. There is mounting evidence that adopting a colorblind approach can have negative consequences. For example, when compared to 'multiculturalism' – an approach that acknowledges and celebrates diversity - colorblindness is associated with greater levels of implicit and explicit racial bias among Whites (Richeson & Nussbaum, 2004), more negative behaviour among Whites during interracial interactions (Apfelbaum, Sommers, & Norton, 2008; Holoien & Shelton, 2012), and greater disengagement in the workplace among ethnic minority coworkers (Plaut, Thomas, & Goren, 2009). Recent research has also found that children exposed to colorblind messages are less likely to detect blatant racial discrimination, and are less likely to report discriminatory behaviour in a way that would prompt intervention from an adult (Apfelbaum et al., 2010). Additional research suggests that discussing race with children can have positive outcomes; children who were explicitly taught about historical racial discrimination had more positive explicit attitudes towards Blacks, and valued racial fairness to a greater degree than children who were not explicitly taught about racial discrimination (Hughes, Bigler, & Levy, 2007). Taken together, I believe that it is important to acknowledge that there are contexts in which it is useful and important to draw children's attention to racial and ethnic differences in order to teach children to

appreciate the benefits of living in a multicultural society. However, there are other situations when construing novel individuals according to their race may strengthen prejudicial attitudes, and lead children to form inaccurate impressions of others based solely on their racial group membership.

In addition, it is important to note that although this research demonstrates that children's construals can dramatically impact their implicit attitudes, future research should also aim to change children's associations with specific racial groups, with a particular focus on negativity that might be automatized. Some research suggests that one factor that can have a direct impact on racial attitudes, including implicit racial attitudes, is cross-group friendships (Aboud, Mendelson, & Purdy, 2003; Aberson, Shoemaker, & Tomolillo, 2004; Page-Gould, Mendoza-Denton, Alegre, & Siy, 2010; Pettigrew, 1998; for a meta-analysis, see Pettigrew & Tropp, 2006). One study found that White British children with South Asian friends had more positive implicit attitudes towards South Asians relative to children with no South Asian friends (Turner, Hewstone, & Voci, 2007) – a finding consistent with Allport's (1954) Contact Hypothesis. Given that children can show more positive implicit attitudes of Blacks (relative to Whites) when they construe them by a competing dimension other than race, it is possible that children may be more likely to approach and befriend Black peers if they initially view them through a non-racial lens. Over time, if these friendships evolve and mature, children will have more opportunities to develop positive associations with Blacks, which may ultimately lead to the automatization of more egalitarian attitudes.

In conclusion, the current research furthers our theoretical understanding of children's implicit racial attitudes by revealing that there <u>are</u> conditions under which

children will show greater implicit positivity towards Black (relative to White) children. Despite mounting evidence that implicit pro-White biases, as measured by the IAT, are stable across development, the current findings suggest that children's biases towards multiply categorizable targets can depend on person construal. Importantly, this research also provides the first evidence that adults can increase the salience of other, potentially more relevant dimensions during person perception, and this can have a direct impact on children's implicit attitudes. It is clear that more research is needed to increase our understanding of the malleability of children's implicit racial biases. As a first step, this research provides an optimistic outlook that implicit racial bias is not inevitable when children see others through a different lens.

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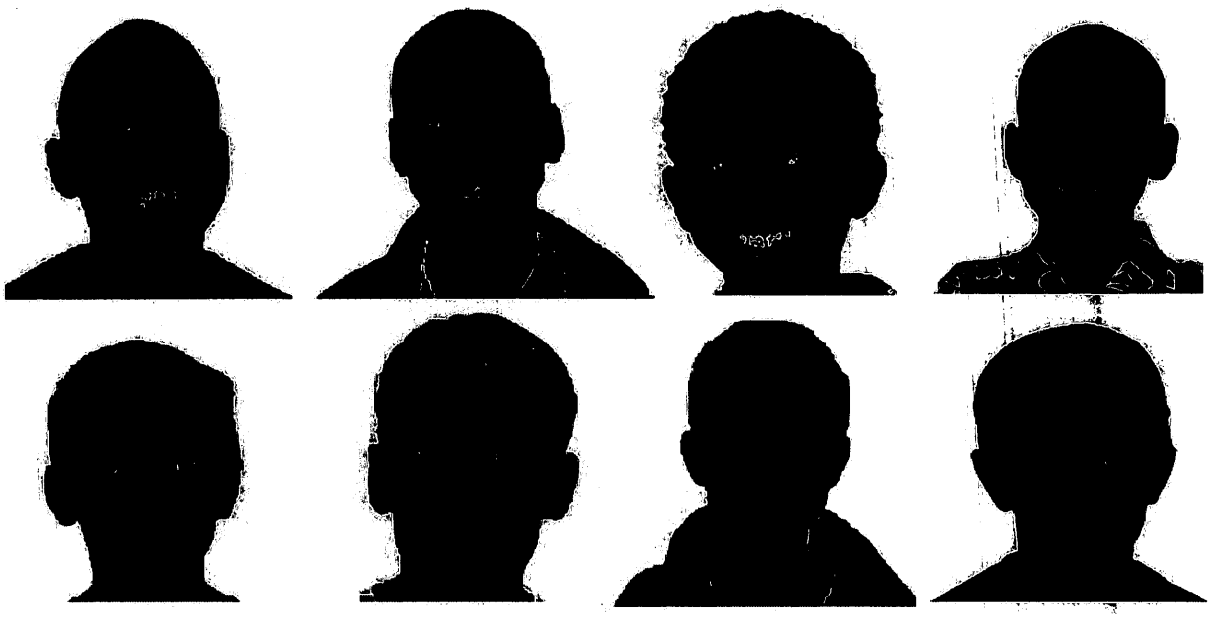
Appendices

Appendix A: Images Presented in Study 1

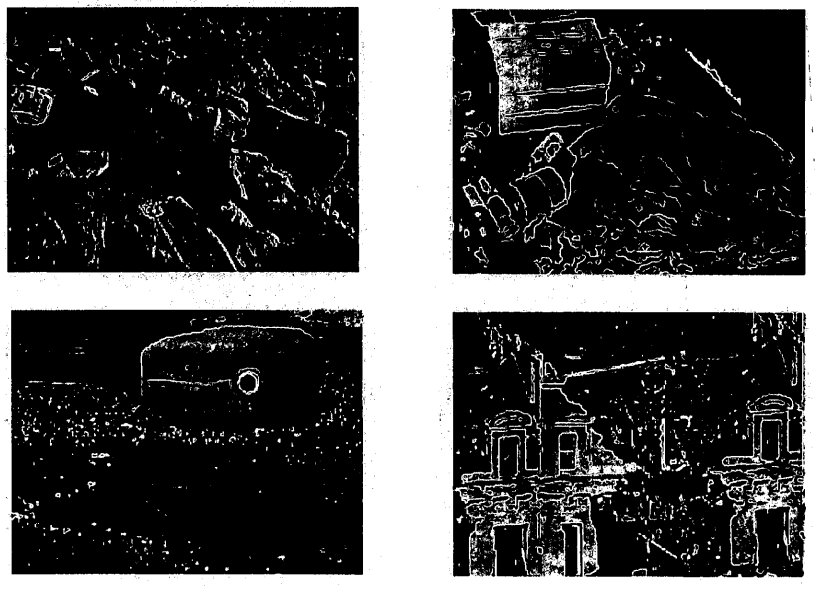
Stimuli Presented in the Child-Friendly Implicit Association Test (ch-IAT)

Target Concepts.

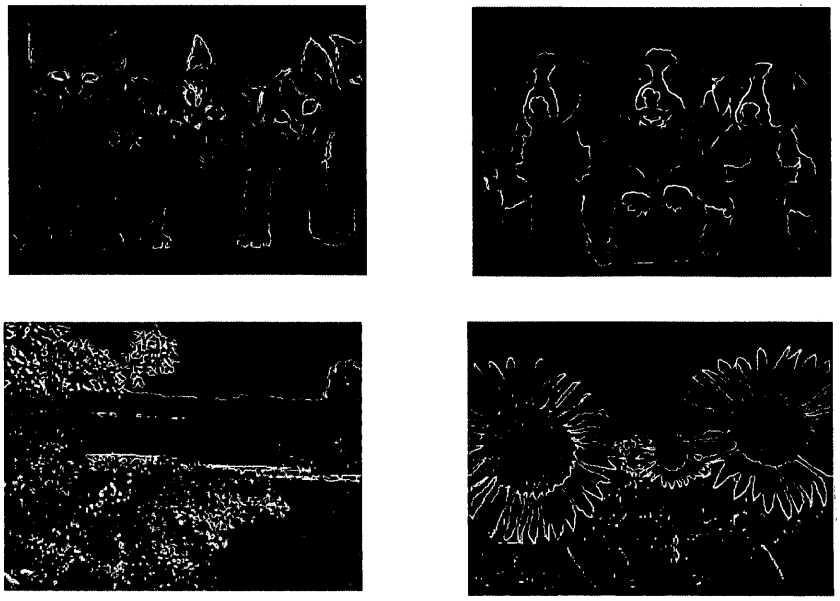


Attribute Concepts.

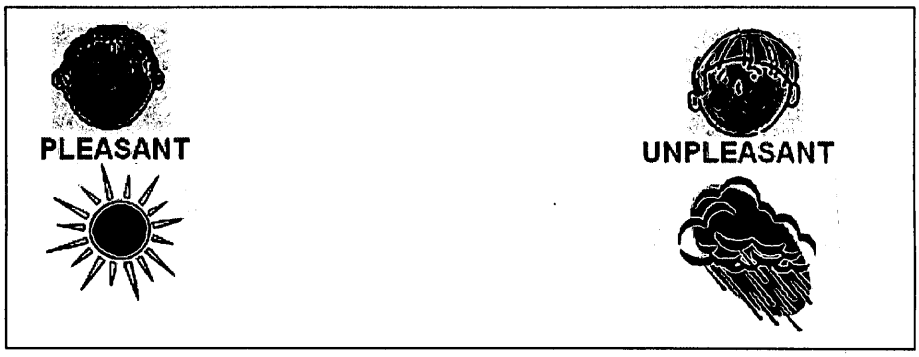
Unpleasant Pictures



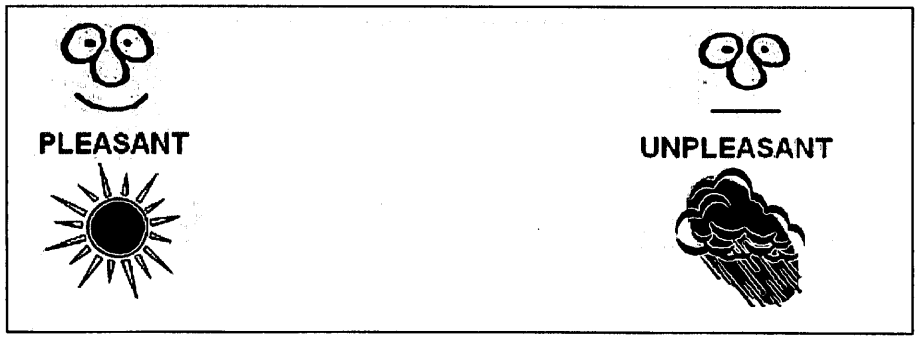
Pleasant Pictures



Header for Race-Construal IAT



Header for Emotion-Construal IAT

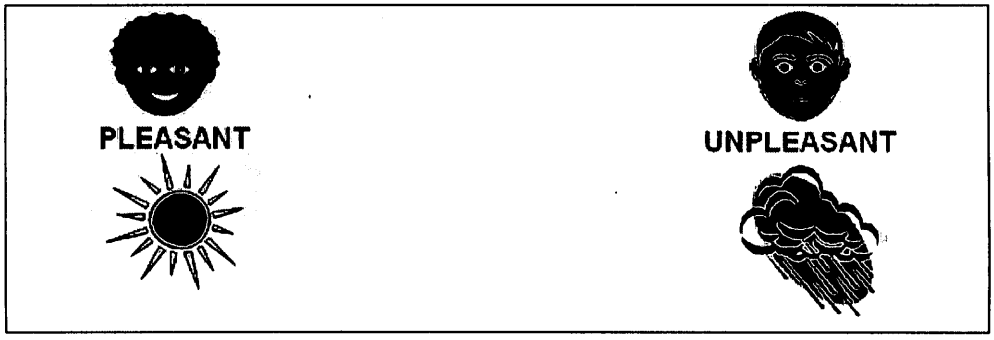


Appendix B: Images Presented in Study 2

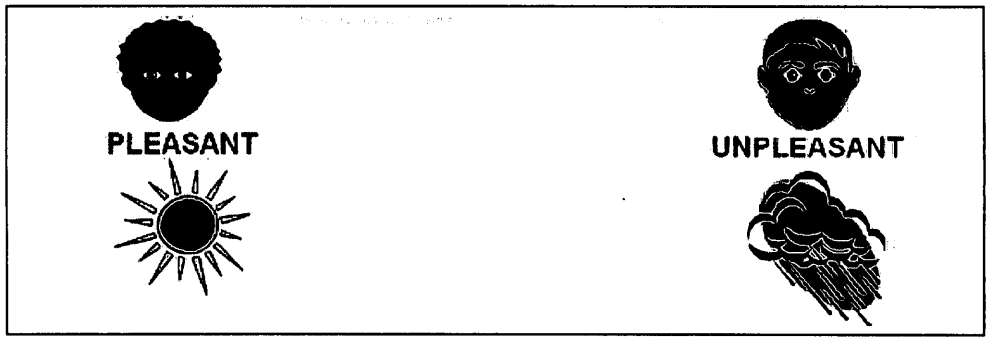
Stimuli Presented in the Child-Friendly Implicit Association Test (ch-IAT)

Replacement Neutral White Target

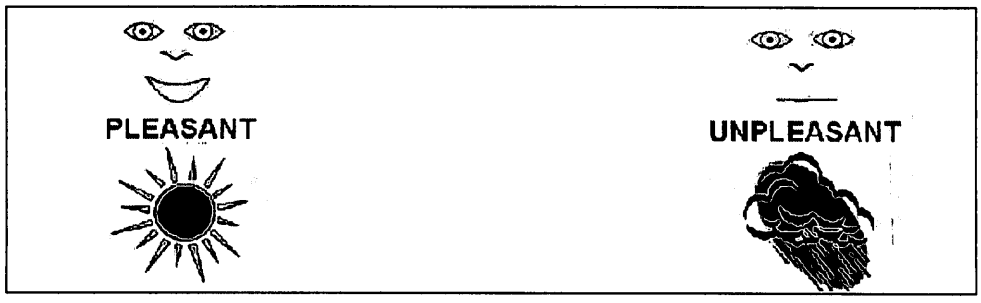
Header for Spontaneous-Construal IAT



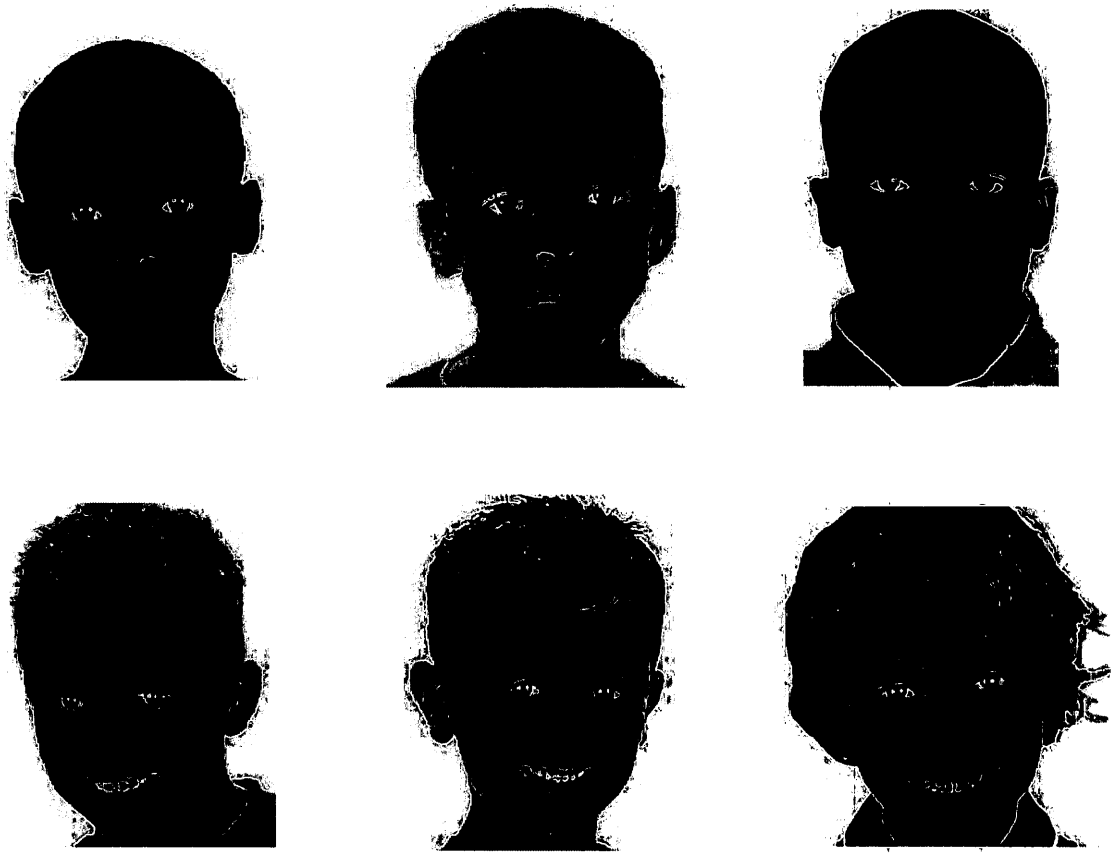
Header for Race-Construal IAT



Header for Emotion-Construal IAT



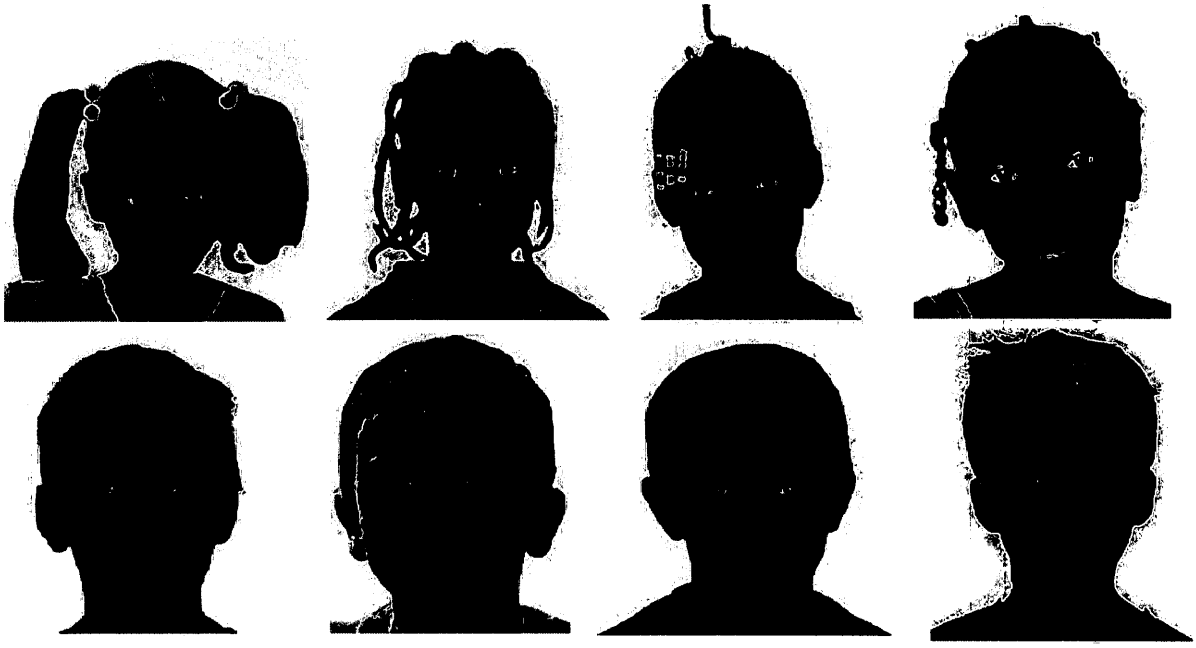
Faces used in the Construal Block of the Spontaneous-Construal IAT



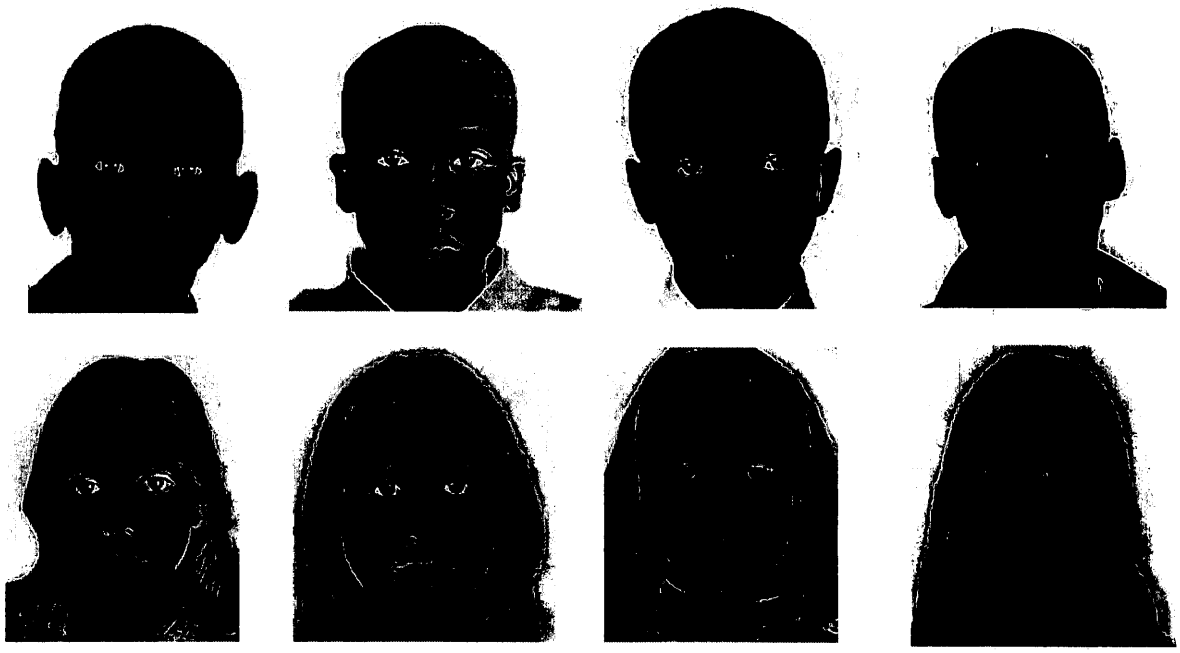
Appendix C: Images Presented in Study 3

Stimuli Presented in the Child-Friendly Implicit Association Test (ch-IAT)

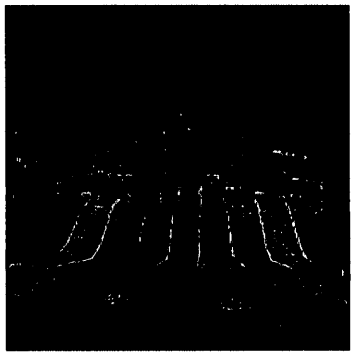
Target Concepts for Female Participants.

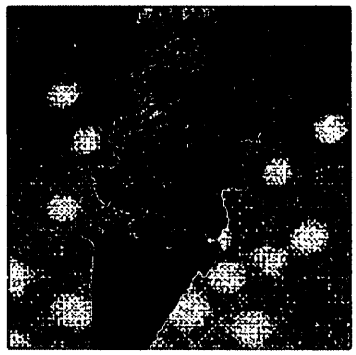


Target Concepts for Male Participants.

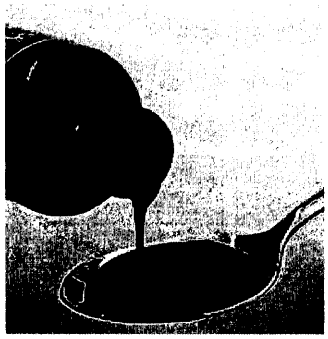


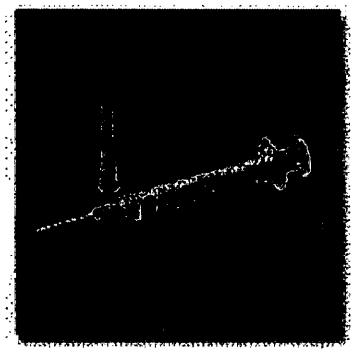
Pleasant Pictures



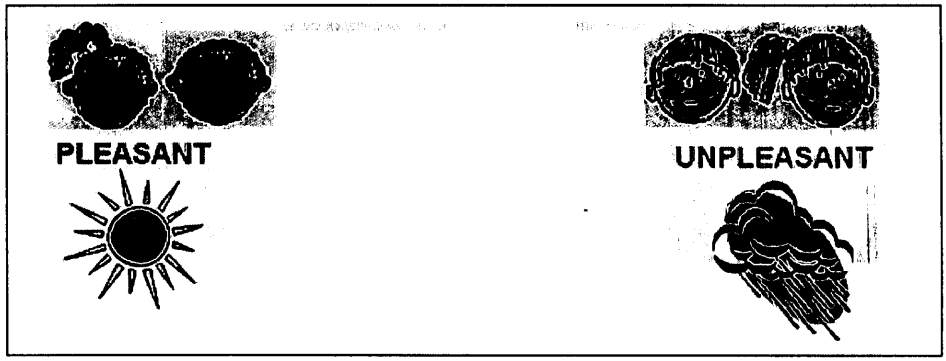



Unpleasant Pictures

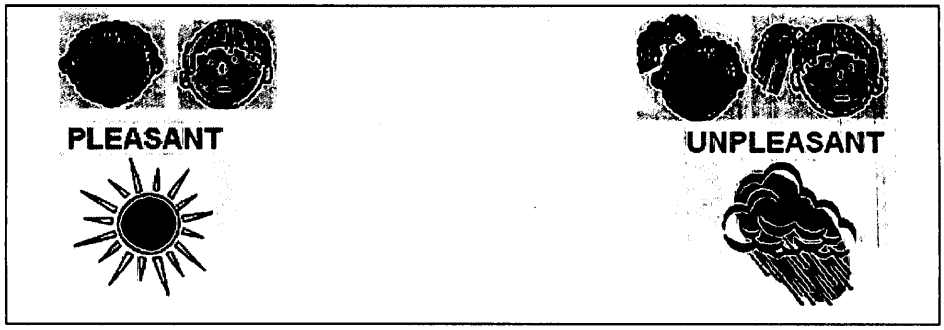




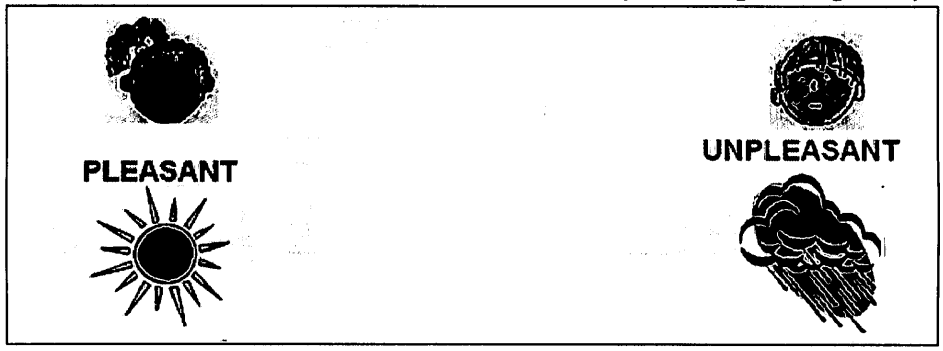

Header for Race-Construal IAT



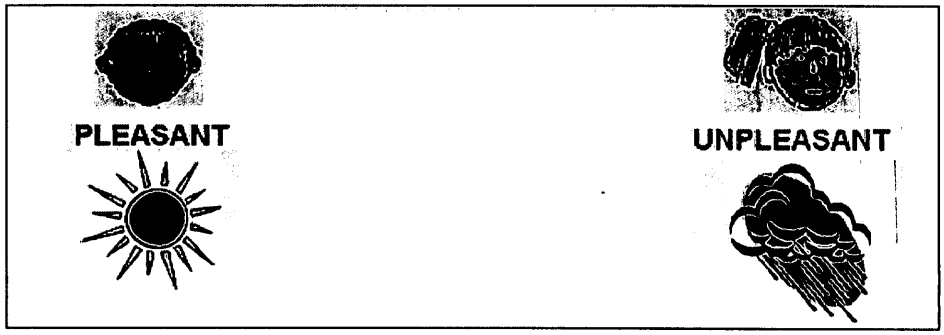
Header for Gender-Construal IAT



Header for Spontaneous-Construal IAT (female participants)



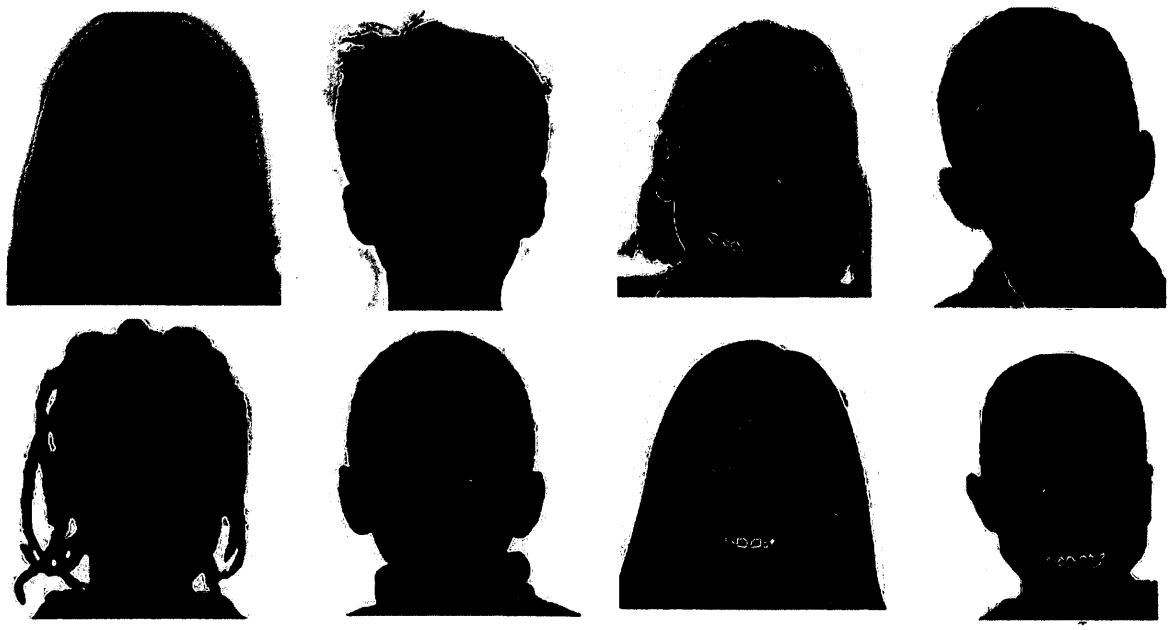
Header for Spontaneous-Construal IAT (male participants)



Appendix D: Images Presented in Study 4

Stimuli Presented in the Salience Intervention Measure

Pictures Sorted in the Intervention Condition



Stimuli Presented in the Salience Intervention Measure

Pictures sorted in the Control Condition